

### REMARKS

Claims 1-7 are now in the application and are directed to the elected invention. The claims have been amended to recite “natural rubber”. In addition, claim 1 has been amended to recite “whereby the processing efficiency and heat efficiency in the production of natural rubber from natural rubber latex are improved”. Basis for this recitation can be found, for example, at page 2, lines 5-9 of the specification. Claim 5 has been amended to recite “wherein said pulse drying is carried out in the presence of a viscosity stabilizing agent” in place of “wherein said pulse drying is carried out by adding a viscosity stabilizing agent to the natural rubber latex”. The amendments to the claims do not introduce any new matter.

The rejections of claims 5-7 under 35 USC 112, first paragraph for failing to comply with the written description and lack of enablement have been obviated by the amendment to claim 5 to recite “wherein said pulse drying is carried out in the presence of a viscosity stabilizing agent” as apparently suggested by the examiner in the final office action.

Claim 1-7 were rejected under 35 USC 103(a) as being unpatentable over US Patent 5,252,061 to Ozer in view of US Patent Application Publication 2003/0092819 to Miyatake et al.; JP 2002-069103 to Toratani et al and US Patent 5,842,289 to Chandran et al. The cited references do not render obvious claims 1-7 as amended.

As is clear from the disclosure of the present application, and as recited in the amended claims, the essence of the present invention resides in the use of the pulse drying using a pulse combustion dryer under the specified conditions (i.e., a frequency of 250 – 1200 Hz and a temperature of 40 - 140°C), for drying a natural rubber latex having a solid concentration (or a dried rubber concentration) of 60% by weight or less, whereby the major increase in productivity and heat efficiency is achieved and the heat degradation or gelling of rubber occurring with conventional drying by heat is suppressed. As a result, the rubber quality can be readily and extremely easily controlled. Furthermore, due to the gelling being suppressed, the viscosity is decreased and the mixing process of the natural rubber can be greatly improved as compared to the prior art. Namely, as shown in test results of Table 1, according to the present invention, the

time required for the production of the solid natural rubber can be surprisingly remarkably decreased from about 7 days to only 3 hours , while achieving the excellent propertied of the natural rubber.

Ozer suggests a method using a pulse combustion dryer for drying various kinds of materials. However, Ozer fails to teach the pulse combustion drying of the natural rubber latex and the use of the above-specified pulse combustion dryer conditions (i.e., frequency of 250 – 1200 Hz and temperature of 40 - 140°C) therefore. Especially, Ozer neither discloses nor teaches the problems (i.e., heat degradation and gelling of rubber liable to occur in the conventional drying of natural rubber by heat) of the natural rubber, when producing from the natural rubber latex. This does not occur in the pulse combustion drying of the materials taught, in Ozer et al.

Miyatake does not overcome the above discussed deficiencies of Ozer with respect to rendering unpatentable the present invention. Miyatake suggests drying the rubber-modified resin. However, again the drying of the natural rubber from natural rubber latex under the above-specified pulse combustion dryer conditions (i.e., the frequency and temperature) and the advantageous effects and results obtained therefrom are completely absent in Miyatake et al.

Toratani does not overcome the above discussed deficiencies of Ozer with respect to rendering unpatentable the present invention. Toratani only suggests the use of a viscosity stabilizing agent in the production of natural rubber from the latex thereof. However, again, Toratani neither discloses nor teaches the drying of the natural rubber latex using a pulse combustion dryer under the above-specified dryer conditions and the above-mentioned advantageous results therefrom.

Furthermore, although it is stated in the Office Action that Toratani teaches using a temperature of between 100°C and 140°C when drying in a single step, this temperature range does not correspond to the temperature range of 100°C-140°C according to the present invention. Namely, Toratani intends this temperature range to be the drying temperature; whereas, in the

present invention, this temperature range is intended to be the temperature of the drying chamber, which may be less than 100°C (e.g., 60°C in Example 1, 70°C in Example 3). This is because the temperature of 40°C to 140°C is not used as the drying means. The drying is carried out by the pulse wave in the present invention.

Chandran does not overcome the above discussed deficiencies of Ozer with respect to rendering unpatentable the present invention. Chandran neither discloses nor teaches the use of the pulse combustion drying of the rubber latex under the above-specified drying conditions and the above-mentioned advantageous results obtained therefrom. It is stated in the Office Action that Chandran teaches the use of the frequency of the pulse combustion of 50-500 Hz. However, the use of the pulse combustion drying in the production of natural rubber is completely absent in Chandran.

The cited art lacks the necessary direction or incentive to those of ordinary skill in the art to render the rejections under 35 USC 103 sustainable. The cited art fails to provide the degree of predictability of success of achieving the properties attainable by the present invention needed to sustain a rejection under 35 USC 103. See *KSR Int'l Co. v. Teleflex, Inc.*, 127 S.Ct. 1727; 82 USPQ2d 1385 (2007), *Diversitech Corp. v. Century Steps, Inc.* 7 USPQ2d 1315 (Fed. Cir. 1988), *In re Mercier*, 185 USPQ 774 (CCPA 1975) and *In re Naylor*, 152 USPQ 106 (CCPA 1966).

Moreover, the properties of the subject matter and improvements which are inherent in the claimed subject matter and disclosed in the specification are to be considered when evaluating the question of obviousness under 35 USC 103. See *KSR Int'l Co. v. Teleflex, Inc.*, 127 S.Ct. 1727; 82 USPQ2d 1385 (2007), *Gillette Co. v. S.C. Johnson & Son, Inc.*, 16 USPQ2d. 1923 (Fed. Cir. 1990), *In re Antonie*, 195 USPQ 6 (CCPA 1977), *In re Estes*, 164 USPQ 519 (CCPA 1970), and *In re Papesch*, 137 USPQ 43 (CCPA 1963).

No property can be ignored in determining patentability and comparing the claimed invention to the cited art. Along these lines, see *In re Papesch*, supra, *In re Burt et al*, 148 USPQ

548 (CCPA 1966), *In re Ward*, 141 USPQ 227 (CCPA 1964), and *In re Cescon*, 177 USPQ 264 (CCPA 1973).

In view of the above, consideration and allowance are respectfully solicited.

In the event the Examiner believes an interview might serve in any way to advance the prosecution of this application, the undersigned is available at the telephone number noted below.

The Office is authorized to charge any necessary fees to Deposit Account No. 22-0185, under Order No. 21713-00059-US1 from which the undersigned is authorized to draw.

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Respectfully submitted,

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